WHAT IS CLAIMED

1. Process, of the MPEG type, for the blockwise coding of digital video images in which to each block is assigned a specified resolution dependent on a zone in which this block is located, an image comprising at least two zones to which different resolutions are assigned, characterized in that the mixed blocks straddling two zones of different resolutions are detected, and the zone corresponding to each pixel of these mixed blocks is determined so as to allocate the resolution of this specified zone to this pixel.

2. Process according to Claim 1, characterized in that to define the zones of different resolutions, use is made of an algorithm for image segmentation according to criteria of colours, textures, brightness and/or motion of the pixels.

3. Process according to Claim 1, characterized in that, the coding of an image being performed by a coding of a base layer and of an improvement layer, at least one zone of low resolution, or background zone, and at least one zone of high resolution, or zone of interest, is allocated to the image, via differences in coding the improvement layers of the pixels lying in these zones.

4. Process according to Claim 3, characterized in that to determine the improvement layer, the difference between the image coded at maximum resolution and the image according to the base layer is determined, this difference constituting a residual used wholly or partly to define the improvement layer.

5. Process according to Claim 3, characterized in that, the base layer and the improvement layer being determined separately, the allocation of resolution to the pixels of a mixed block is performed by taking account both of the base layer and of the improvement layer.

6. Process according to Claim 5, characterized in that the improvement layer of the mixed block is determined by deducting the base layer from this mixed block whose pixels are coded according to different resolutions.

7. Process according to claim 1, characterized in that the image is coded via data or coefficients in the frequency domain, for example via a transformation of the cosine transform type, and in that to allocate to each pixel of the mixed blocks the resolution which corresponds to its zone, the data of the frequency domain are retransformed into the spatial domain, and, after the allocation of resolutions, these data are retransformed into the frequency domain.

8. Process according to claim 1, characterized in that, in a first step, the mixed block is allocated the lowest of the resolutions of the zones which it contains and that in the course of a second step, the resolution of the pixels of this block lying in a zone of higher resolution is increased.

9. Process according to Claim 3, characterized in that the lowest resolution is obtained either via the base layer, or via the combination of the base layer with at least one improvement layer.

10. Process according to Claim 8, characterized in that the lowest resolution is obtained either via the base layer, or via the combination of the base layer with at least one improvement layer.

11. Process according to claim 1, characterized in that in a mixed block comprising two adjacent zones, one having a first resolution and the other a second resolution greater than the first, pixels of the first zone are assigned at least one intermediate resolution lying between the first and the second resolutions.

12. Process according to Claim 11, characterized in that the intermediate resolution(s) is (are) dependent on a quantization interval (PQ) used to code the zones of lowest resolution.

13. Process according to Claim 11, characterized in that the closer the pixels (P(i,j)) of the first zone are to the second zone, the more their resolution increases.

14. Process according to Claim 11, characterized in that an intermediate resolution is allocated to all the pixels of the first zone which are located in the mixed block.

15. Process according to Claim 13, characterized in that the intermediate resolution of each pixel of the first zone is a linear function of the distance of this pixel from the second zone.

16. Process according to Claim 14, characterized in that the intermediate resolution of each pixel of the first zone is a linear function of the distance of this pixel from the second zone.

17. Process according to Claim 11, characterized in that, for the detection of the mixed blocks, use is made of a mask (66) reproducing the shape of the zones in such a way as to associate the pixels of the image with a zone and to determine the resolution applied to these pixels and in that this mask is modified by allocating values (v''(i,j)) lying between the mask values (1) defining a zone of interest and the mask values (0) defining a background zone to the pixels (P(i,j)) of the mixed blocks.

18. Process according to Claim 17, characterized in that a coefficient A(i,j) calculated according to the formula

$$A(i,j) = (PQ/c) + v''(i,j),$$

is allocated to any pixel (P(i,j)) situated at a row i and at a column j, where c is a constant and v''(i,j) is the mask value allocated to the pixel P(i,j) by this mask, the resolution N(i,j) of each pixel (P(i,j)) of a mixed block then being equal to:

$$N(i,j)= A(i,j).Z_{in}(i,j) + (1- A(i,j)).(Z_{fd}(i, j))$$

where $Z_{fd}(i, j)$ represents the resolution allocated to the background zone where this pixel P(i,j) was located and $Z_{in}(i,j)$ represents the resolution allocated to the zone of interest neighbouring this background zone.

19. Image, of the MPEG type, from blockwise coding, which image is obtained by a coding process according to claim 1.

20. Coded digital video signal of an image, which signal is obtained with the aid of a process according to Claim 1.